

ABSTRACT

A manipulator comprises an operation command unit provided with an attitude adjusting unit and an end effector control unit, a connecting unit having one end connected to the operation
5 command unit, a working unit connected to the other end of the connecting unit and provided with an end effector and a support unit supporting the end effector for motions, and a control unit that transmits an operation command provided by the attitude
10 adjusting unit to the support unit to adjust the attitude of the end effector and transmits an operation command provided by the end effector control unit to the end effector to operate the end effector. The support unit includes a first joint capable of turning about a first axis perpendicular to the center axis of the connecting unit, and a second joint capable of turning about
15 a second axis perpendicular to the first axis. The end effector can be turned for rolling about an axis substantially parallel to the second axis of the second joint. The attitude adjusting unit has a third joint having a third axis perpendicular to the center line of the connecting unit. The end effector control unit
20 is formed such that the fingers of an operator gripping operating members included in the end effector control unit extend substantially in parallel to the fourth axis.

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